UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

MEMORANDUM

DATE: December 21, 2011

SUBJECT: Science Review in Support of the Registration of SummerSet All Down Herbicide® Containing 8.00% Acetic Acid and 6.00% Citric Acid As Its Active Ingredients.

Decision Number: 456548
DP Number: 395360
EPA File Symbol Number: 84069-2
Chemical Class: Biochemicals
PC Code: 044001 (acetic acid), 021801 (citric acid)
CAS Number: 64-19-7 (acetic acid), 77-92-9 (citric acid)
Active Ingredient Tolerance Exemptions: 180.1258 (acetic acid), 180.950 (citric acid)
MRID Numbers: 48635601-48635602

FROM: Angela L. Gonzales, Biologist 12/21/11
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

TO: Colin Walsh, Regulatory Action Leader
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

~~**THE FOLLOWING CONTAINS CONFIDENTIAL BUSINESS INFORMATION**~~

ACTION REQUESTED

In response to the condition of registration in the Agency's June 30, 2010 registration notice for this product which is also discussed in a memorandum from A. L. Gonzales to C. Greene dated January 21, 2010 the applicant has submitted nontarget toxicology data in MRIDs 48635601-48635602.

RECOMMENDATIONS AND CONCLUSIONS

1. The nontarget toxicology submission is ACCEPTABLE.
MRID 48635601: ACCEPTABLE MRID 48635602: ACCEPTABLE

a. In the study provided in MRID 48635601, acetic acid was determined to be practically non-toxic to the honeybee (LD_{50} >25 µg/bee).

b. In the study provided in MRID 48635602, citric acid was determined to be practically non-toxic to the honeybee (LD_{50} >25 µg/bee).

STUDY SUMMARIES

Non-Targets (MRIDs 48635601-48635602)

Note: DERs were not created for the submitted MRIDs; however, summaries of the submitted data are presented below.

MRID 48635601

The toxicity of acetic acid to the honey bee (*Apis mellifera*) was determined in an acute contact limit test. The study employed the use of a control treatment as well as a reference treatment (37.5% dimethoate: 0.35 µg/bee). Each treatment consisted of 5 replicates using 5 bees per replicate. Bees were obtained one day before test initiation from healthy, disease-free and queen-right colonies that were not treated with any chemical substance for at least four weeks prior to collection. The approximate age of the bees was not reported. Subsequent to study initiation, bees were acclimatized to the laboratory atmosphere overnight. Bees were fed with a 50% w/v sugar solution. The test site, materials and environmental conditions were adequately described. Bees were dosed with 25 µg a.i./bee using a 30% solution of acetic acid. For the treatment application, the insects were anaesthetized with carbon dioxide and forceps were used for handling. The dose was applied on the dorsal side of the thorax using a calibrated micro-pipette. Bees were observed for 48 hours post-application in the acetic-acid and control groups. Bees were observed for 24 hours post-application in the dimethoate-treated groups. Mortality was assessed at 4, 24 and 48 hours post-application. Effects such as hyperactivity, paralysis, and poor coordination were also assessed. There was no mortality observed in the control group. There was 12% (3 bees) mortality in the acetic acid test groups after 48 hours, while there was 100% mortality in the dimethoate groups after 24 hours. Mortality in the acetic acid groups occurred between 24 and 48 hours post-treatment and was only seen in 2 of the 5 groups. No behavioral effects were observed in the acetic acid treated groups. A certificate of analysis was provided for acetic acid. Although recommended in OCSPP guideline 850.3020, the wetting agent used to improve penetration of the test substance into the thorax of the insect (polyether-modified trisiloxane) was not tested as a control. The LD_{50} was determined to be >25 µg/bee.

MRID 48635602

The toxicity of citric acid to the honey bee (*Apis mellifera*) was determined in an acute contact limit test. The study employed the use of a control treatment as well as a reference treatment (37.5% dimethoate: 0.35 µg/bee). Each treatment consisted of 5 replicates using 5 bees per replicate. Bees were obtained one day before test initiation from healthy, disease-free and queen-right colonies that were not treated with any chemical substance for at least four weeks prior to collection. The approximate age of the bees was not reported. Subsequent to study initiation, bees were acclimatized to the laboratory atmosphere overnight. Bees were fed with a 50% w/v sugar solution. The test site, materials and environmental conditions were adequately described. Bees were dosed with 25 µg a.i./bee using a 100% solution of citric acid. For the treatment application, the insects were anaesthetized with carbon dioxide and forceps were used for handling. The dose was applied on the dorsal side of the thorax using a calibrated micro-pipette. Bees were observed for 48 hours post-application in the citric acid and control groups. Bees were observed for 24 hours post-application in the dimethoate-treated groups. Mortality was assessed at 4, 24 and 48 hours post-application. Effects such as hyperactivity, paralysis, and poor coordination were also assessed. There was no mortality observed in the control group or in the citric acid group, while there was 100% mortality in the dimethoate groups after 24 hours. No behavioral effects were observed in the citric acid treated groups. A certificate of analysis was not provided for citric acid. Although recommended in OCSPP guideline 850.3020, the wetting agent used to improve penetration of the test substance into the thorax of the insect (polyether-modified trisiloxane) was not tested as a control. The LD_{50} was determined to be >25 µg/bee.

cc: A. L. Gonzales, C. Walsh, BPPD Science Review File, IHAD/ARS
A. L. Gonzales, FT, PY-S: 12/21/11